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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,685	02/25/2004	Sundar Mohan Rao	RD8470 US NA	3025
43683	7590	11/30/2006		
PHILLIP W. DEL NERO PO BOX 787 NORMAN, OK 73070-0787			EXAMINER NGUYEN, TRI V	
			ART UNIT 1751	PAPER NUMBER

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/786,685	<b>Applicant(s)</b> RAO, SUNDAR MOHAN	
	<b>Examiner</b> Tri V. Nguyen	<b>Art Unit</b> 1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Request for Continued Examination***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 8, 2006 has been entered.

### ***Response to Amendment***

2. In the amendment filed on September 8, 2006, Claim 1 has been amended. Claim 3 has been cancelled. The currently pending claims considered below are Claims 1, 4-10 and 12-14.

### ***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 4-10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locke et al., US 5,756,020 in view of Reinehr et al., US 4,087,494 and Hixon et al., 'US 5,445,653.

Locke et al. disclose a process of producing solution dyed extruded fibers wherein several colorants are mixed to form a large variety of colored polymer products. In the example in column 4, nylon 66 is colored "Weathered Tan" by mixing black, white, yellow and red pigments into the nylon 66 prior to spinning. These are the colors of the pigments added to the

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claimed process in applicant's claims. Regarding claim 7, Locke et al. discloses that copolymers of nylon containing 1-4% of the sodium salt of 5- sulfoisophthalic acid (cationically dyeable) nylon are particularly useful. Col 3 lines 15- 17. Locke does not teach over dyeing, nor the particularly claimed amount of color pigment added or the particular pigments as claimed.

Reinehr et al. disclose a process of incorporating carbon black pigment into a polymer before spinning and extruding, and then over dyeing. They state that this method makes it possible to save considerable amounts of dyestuff. See abstract.

Hixon et al. states at col 1 lines 37 et seq. that incorporating pigments into nylon at the time the filaments are produced provides solution-dyed nylon in which the coloring will not wash out or bleed during further dyeing treatments, and that said nylon may be over dyed. He states that the problem with this process is that solution dyed nylon comes in only a few solid colors, which limits the creation of designs.

It would have been obvious to the man having skill in the art at the time the invention was made to over dye the pigmented nylon 66 produced by the process of Locke et al. and thereby produce the claimed product because both Hixon and Reinehr teach advantages of pigmenting thermoplastic fibers before spinning and then over dyeing. Reinehr teaches in the abstract the first advantage in the abstract where it is stated that over dyeing carbon black pigmented fibers save a considerable amount of dyestuff. The examiner notes that the trichromatic system of dyeing is a system of mixing blue, red and yellow to formulate a wide variety of neutral shades including black. Accordingly the addition of the trichromatic mixture of pigments as claimed is akin to adding a black pigment to the solution of nylon. Regarding another advantage of the process of over dyeing pigmented polymers, Hixon teaches that optimum styling effects may be achieved by over dyeing solution dyed nylon, and discloses the

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need for a larger variety of colors of solution dyed nylon, which is the problem solved by Locke et al.

The "consisting essentially of" language of the present claim does not necessarily exclude the components of the Reinehr reference because "consisting essentially of" renders the composition open to the inclusion of unspecified ingredients which do not materially affect the basic and novel characteristics of the composition, see *Ex parte Davis et al.* (Bd of Appeals), 80 USPQ 448. Applicants have not submitted factual evidence showing that the components of the Reinehr reference materially affects the instant invention.

Locke et al., Reinehr et al. and Hixon et al. do not explicitly disclose the pigmented fiber with the L\* value off-white color. However, Locke et al., Reinehr et al. and Hixon et al. teach the same ingredients with a similar trichromatic dye color system and same fiber thus a chemical engineer in the solution dyeing art would arrive to the same pigmented fiber with an off-white color and L\* value absent of unexpected results.

Regarding the claimed amount of pigment added to the polymer, Locke et al. does not explicitly disclose the amount of about 10 to about 600 ppm by weight of the fiber; however, a chemical engineer in the solution dyeing art has the experience and knowledge necessary to adjust the amount of pigment to achieve his desired shading effects. The amount of pigment used is disclosed at the last paragraph of col 1 where patentee states that 0.1 weight percent (1000 ppm) to 70 weight percent is the amount of pigment in each concentrate. Since this amount is further diluted when mixed with the thermoplastic polymer, applicant's upper limitation is included in the amount used in the process of Locke. Furthermore, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, see

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Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05I.

Regarding claim 8, a dye chemist knows that a polymer must be dyed with a compatible dye, for example, if the polymer is cationic dyeable nylon, a cationic dye will be used.

Regarding the particular pigments claimed in claims 9-11, Locke does not disclose which pigments may be used. Accordingly, the process is deemed open to any and all pigments absent evidence to the contrary.

Regarding claim 12, Locke does not name the white pigment in his example; however, titanium dioxide is the most widely used white pigment.

Regarding the limitations of claims 13 and 14, Hixon et al. discloses that said solution dyed overdyed nylon is appropriate for yarns used in carpets and upholstery fabric. See col 1 line 12 and 13.

### ***Response to Arguments***

5. Applicant's arguments filed on September 8, 2006 have been fully considered but they are not persuasive. The amended claim limitations of the claim 1 have been addressed in the rejection above.

The applicant argues that the Reinehr et al. reference teaches away since it can only be used to make fibers with dark colors (page 8). The Examiner respectfully disagrees as Reinehr et al. disclose controlling the conditions results in obtaining "a wide range of colours ranging from light shades of all kinds to dark shades" (col 1, lines 49-50).

The applicant further argues that the Hixon et al. reference teaches away due to a limit to the designs available (page 8) and that the combination of Reinehr et al. and Hixon et al.

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would lead to a large supply and inventory management (page 9). The Examiner remarks that these arguments are not directed to any limitation of the instant claims.

The applicant argues that "off-white" is different from "grey-white" (page 9). The Examiner respectfully disagrees as the broadest interpretation of "off-white" is tending towards white and grey-white thus tends towards white. Furthermore, the examiner remarks that the new limitation has been addressed in the rejection above.

### **Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri V. Nguyen whose telephone number is (571) 272-6965. The examiner can normally be reached on M-F 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER